

Abstract

The invention relates to a method for producing unsaturated hydrocarbons. According to said method, in a first step, a hydrocarbon, especially a mixture which contains alkanes, essentially no water, and can contain water vapour, is continuously guided through a first catalyst bed provided with standard dehydration conditions. Liquid water, water vapour and a gas containing oxygen are then added to the reaction mixture obtained in the first step and, in a second step, the reaction mixture obtained is then continuously guided through another catalyst bed for oxidising hydrogen and for further dehydrating hydrocarbons. The first catalyst bed can be heated and the heating in the first step is then preferably regulated in such a way that an essentially isothermic operating mode is created.

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